

Neighborhood Partnerships for Community Research

...a program of the Center for Urban and Regional Affairs (CURA)

Growing Community Resilience: Empowering Neighborhoods with Tools of Design for the Northern Climate

Prepared in partnership with
McKinley Community CSA

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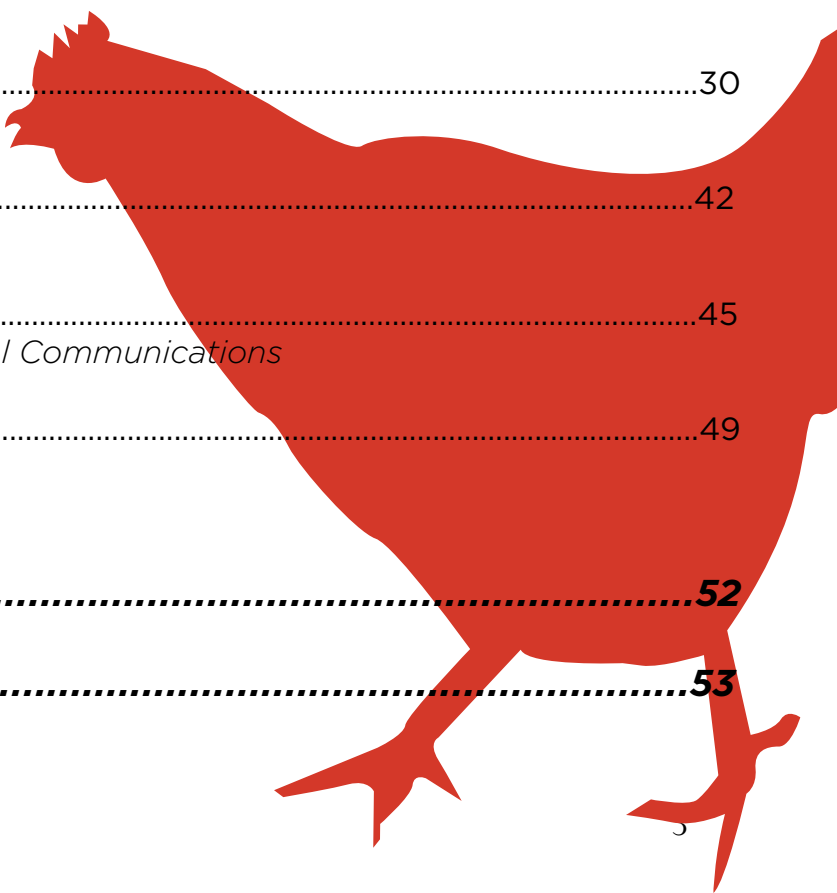
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INTRODUCTION

When I walked away from my first meeting with Jenny and Dana at the McKinley Community CSA, I was ecstatic to finally have an opportunity to apply landscape architecture skills to an area I have loved for many years - urban agriculture. Immediately after that, I felt panicked. Wait, what did I have to offer them? They were already *doing* something we designers just like to talk about and pretend all of the veggies grow perfectly. These women were actually making it happen. So, where did I as a designer fit in? What could I offer them? After hearing what they needed from me and pondering what perspective a designer had to offer over a horticulture student, I realized it was my relationship to the three-dimensional world. My familiarity with gardening and raising vegetables helped, but it was not my knowledge of cover crops or irrigation techniques they needed. It was the thoughts I could offer about how cover crops and irrigation can be integrated into an urban farm in a way that is pleasing to the public eye, opens a door for conversation with community members, and still manages to grow really good food. In short, I got to imagine how requisite farming tasks can be used to direct the visual, spatial, and communicative fields of this hardworking urban farms.

With that being said, the intent of this handbook is to provide interested urban farmers, gardeners, and community groups with a basic design primer for creating a pocket farm, community garden, or community supported agriculture (CSA). I have gathered basic components of urban agriculture, researched multiple precedents, and offered a design eye about how to arrange them, what to consider, and how each element might be constructed, perceived, or used by farmers and their surrounding community. I also included preliminary questions a designer initially asks upon seeing a site for the first time and tailored them to the needs of urban agriculture. Lastly, unless otherwise noted, all ideas and plants suggested are for the Northern climate (hardy to USDA Zone 4).

I hope this provides some interesting ideas, offers some suggestions to issues facing your urban agriculture project, and begins an on-going dialogue between designers and community-led food projects.

Thank you for the opportunity.

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SITE ASSESSMENT

Prior to creating the initial site design for a new urban agriculture plot, it is important to take time for a full evaluation of existing site conditions. This critical analysis can bring to light any major constraints limiting the site and reveal unique opportunities. Making a thorough inventory of constraints and opportunities can inform the spatial arrangement of the site design and ensure that any necessary safety measures are taken. This initial assessment is also a chance to learn more about the adjacent properties and speak with any neighbors that may be out and about.

There are eight suggested areas of assessment: *Land Ownership & Current Use; Utilities; Water Access; Solar Aspect; Existing Vegetation & Tree Canopy; Soil Quality; Topography; Neighbors.*

Land Ownership & Current Use

Cities are densely populated and highly developed, yet there are vacant lots, oddly shaped right of ways, and unused open space in every city. If a location has been spotted that is ideal for your urban agriculture dreams, it is important to investigate land ownership prior to digging. Your city will have ownership records for each parcel. If a lot is an eyesore to the neighborhood, a private owner may be delighted to hear you are interested in shaping it into a productive green space. If the lot is owned by the city, a bank, or a large company, it may be more difficult to find the appropriate person to discuss your plans with, but still necessary for liability and permanence purposes. Unless it is a site you are very familiar with, it is also important to find out how the use of the space changes seasonally (e.g., is snowed dumped there during the winter?).

Utilities

The owner of the property may have information about buried gas or electrical lines on the property, but it is still strongly recommended to call your local utility company to come to the site and mark any buried lines. Most cities have a “Call before you dig!” number listed on their municipal website.

Water Access

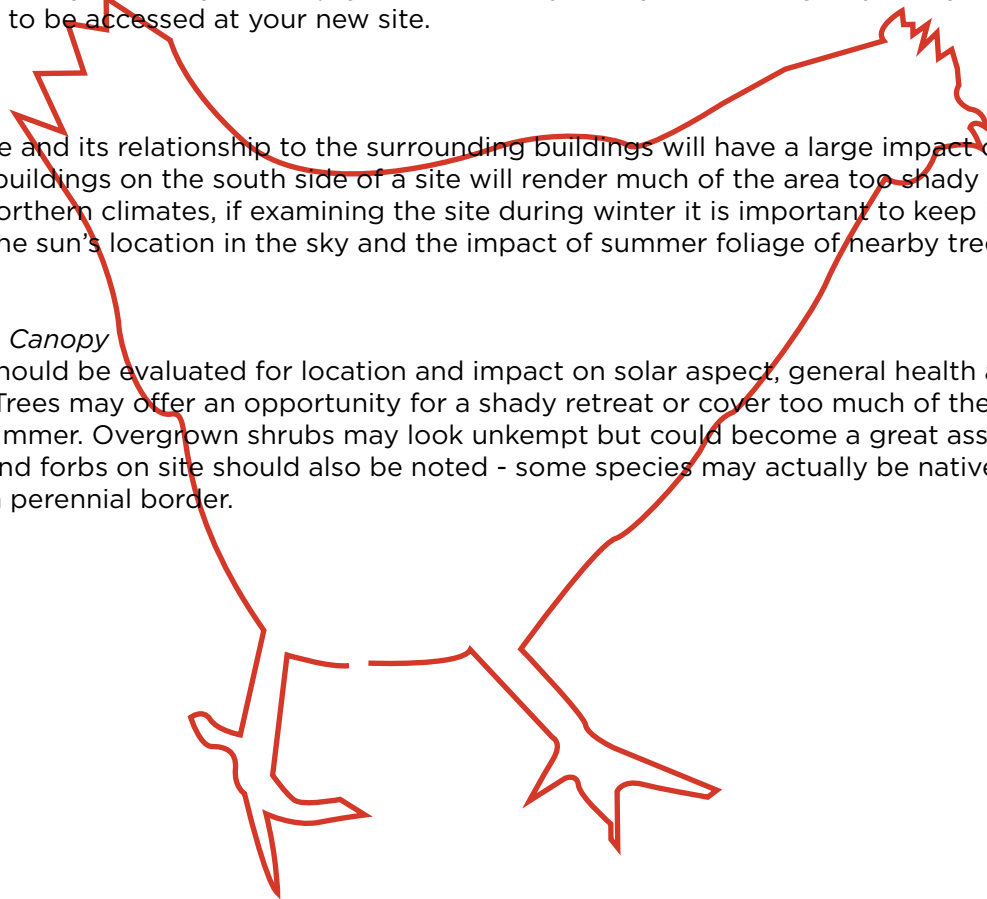
Assessment of adjacent buildings, existing water spigots, and nearby fire hydrants will give you a good idea about how water will have to be accessed at your new site.

Solar Aspect

The orientation of your site and its relationship to the surrounding buildings will have a large impact on how your site is designed. Tall buildings on the south side of a site will render much of the area too shady for fruits and vegetables. In northern climates, if examining the site during winter it is important to keep in mind the seasonal variation of the sun's location in the sky and the impact of summer foliage of nearby trees.

Existing Vegetation & Tree Canopy

Trees and shrubs on site should be evaluated for location and impact on solar aspect, general health and safety, and visual appeal. Trees may offer an opportunity for a shady retreat or cover too much of the site in dense shade during the summer. Overgrown shrubs may look unkempt but could become a great asset with a good pruning. Grasses and forbs on site should also be noted - some species may actually be natives and could be transplanted to a perennial border.



SITE ASSESSMENT (CONT.)

Soil Quality

Urban soils are compacted, contaminated, and devoid of important organic matter needed for growing healthy plants. That being said, a soil test is absolutely critical as part of the site assessment. Soils should be tested for heavy metals and contaminants to know if there is any risk for exposure to harmful substances while digging. Regardless of test results, growing in raised or mounded soil beds is highly recommended for urban areas. A depth of 18" will give plants a good cushion of clean, fertile soil to grow in.

Topography

High and low points of the lots as well as any significant slope should be noted for the micro climates they create - low, moist areas; high, dry areas, sunny, dry slopes, etc. Depending on steepness of incline, slopes and hillsides may impact the site design dramatically or simply be used to your advantage for the purposes of watering.

Neighbors

The proximity of adjacent properties, people walking by your farm or garden everyday, and the unexpected nature of your work are just a few things that set urban agriculture apart from rural agriculture. These neighbors may end up being your biggest allies or your greatest enemies - much of this depends on communication. Introduce yourself, explain what you are trying to do, and keep the door of communication open.

DESIRED OUTCOMES & TYPOLOGY

When considering starting an urban agriculture project, it is important to figure out what function this project hopes to serve. Is the main focus growing crops for a small market stand or a Community Supported Agriculture venture that can bring in money and create jobs? Maybe people in the neighborhood or a youth group are looking to grow their own food so they have access to health produce? Is the space going to grow food but also be a place for teaching classes or simply just resting in the midst of a garden for a bit? Deciding which typology is most appropriate for you, your community, or your organization will dictate a lot about how the site is designed.

Evaluating how your project fits into the larger scheme of urban agriculture in your area is also important. Talking to like-minded projects, reaching out to community garden organizations, and finding out what kind of projects are already happening, may help you decide which type of urban agriculture to create. Plots used as high-yield pocket farms will probably have a different look than those used for group classes, but it is important to have a various kinds of spaces within the urban agriculture matrix to reach all types of audiences.

DESIGN CATEGORIES & COMPONENTS

The following components are design ideas appropriate for urban agriculture. The particular items are being featured because they can serve the dual purpose of aiding food production and creating a visually appealing space. The icons at the bottom of each component page indicates what categories the element serves and serve as a reference to multiple benefits of a component.

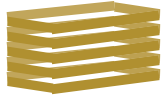
Key:



Beauty & Habitat



Controlling Access



Soil Fertility



Water



Animals



Growing Structures



Weed & Pest Control



Gathering Space



Business Management



Public Relations



BEAUTY & HABITAT

Beauty is certainly in the eye of the beholder; an urban farmer's version of beauty may differ from a local resident who is accustomed to seeing rose bushes and turf grass. Many people may be reticent about having rows of squash and tomatoes in their neighborhood but clever design of agriculture spaces, consistent maintenance, and education can go along way to promoting acceptance.

The following design ideas have an additional benefit: they are also attractive to butterflies, beneficial insects, and birds. Creating habitat for greater biodiversity in our urban areas can be an important asset of urban agriculture. Sustainable growing methods, a native flower bed, and a small bird bath can go a long way in improving our native bird populations, protecting bee colonies, and educating people about ecological systems.

Lastly, design ideas are presented for increasing predatory birds in the area. Predatory birds are tolerant to human activity but lack much of their nature habitat. If given the appropriate site and infrastructure, certain species are important addition to the urban ecosystem. Their presence is crucial for keeping down rodent and insect populations around agricultural plots.

BEAUTY & HABITAT: *Beneficial Perennial Border*

Description: A linear garden bed planted with native perennials known for attracted beneficial insects such as bees, butterflies, parasitic wasps, and lacewings. Placed around the perimeter of a plot, this border can serve as a statement of pride and stewardship. The garden-like appearance of the bed will also blend an agricultural plot into a residential area.

Suggested Species:

Angelica (*Angelica archangelica*)
Anise Hyssop (*Agastache foeniculum*)
Aster (*Aster novae-angliae*)
Bachelor's Buttons or Cornflower (*Centaurea cyanus*)
Bee Balm (*Monarda didyma*)
Black-Eyed Susans (*Rudbeckia fulgida* 'Godstrum')
Blue cardinal flower (*Lobelia syphilitica*)
Boltonia (*Boltonia asteroides*)
Bronze Fennel (*Foeniculum vulgare* var. *purpureum*)
Catmints (*Nepeta*)
Chives (*Allium schoenoprasum*)
Coreopsis (*Coreopsis verticillata* 'Moonbeam')
Cranesbill (*Geranium maculatum*)
Coneflower (*Echinacea purpurea*)
Cup Plant (*Silphium perfoliatum*)
Gayfeather (*Liatris* spp.)
Golden Marguerite (*Anthemis tinctoria*)
Goldenrods (*Solidago* spp.)
Joe-Pye Weed (*Eupatorium maculatum*)
Lavender (*Lavender angustifolia*)
Maximillian's Sunflower (*Helianthus maximiliani*)
Milkweeds (*Asclepias*)
Mountain Mints (*Pycnanthemum virginianum* and *P. muticum*)
Pinks (*Dianthus deltoides*)
Rugosa Roses (*Rosa rugosa*)
Shasta Daisy (*Chrysanthemum maximum*)
Spring Phlox (*Phlox subulata*)
Sweet Cicely (*Myrrhis odorata*)
Yarrow (*Achillea millefolium*)

Maintenance: Weeding and spring clean up will be the most time consuming aspects. Plants should not be cut down in fall; seed heads are winter food source for birds. Up front costs may be prohibitive unless plants can be procured from friends or by donation. Small 3" pots will quickly fill-in and establish themselves as well as be more tolerant of transplant shock. Planting from seed is a possibility but will require vigilant weeding maintenance in early years. Initial watering of seedlings must be consistent but after the first year watering can be kept to a minimum.

More Information: University of Minnesota - Extension and Prairie Moon Nursery are great resources.



ozarknaturalfoods.com



via The Wildflower Farm I LOVE



BEAUTY & HABITAT: *Bird Attracting Hedgerows*

Description: A common hedge comprised of plant species specifically chosen for their fruit and winter sheltering capabilities.

Suggested Species:

American Holly (*Ilex opaca*)
Arrowwood Viburnum (*Viburnum dentatum*)
Cherries (*Prunus* spp.)
Cotoneaster (*Cotoneaster adpressus* var. *praecox*)
Crabapples (*Malus* spp.)
Dogwoods (*Cornus* spp.)
Eastern Red Cedar (*Juniperus virginiana*)
Eastern White Pine (*Pinus strobus*)
Elderberry (*Sambucus canadensis*)
Fragrant Sumac (*Rhus aromatica* 'Gro-low')
Hawthornes (*Crataegus* spp.)
Highbush Blueberry (*Vaccinium corymbosum*)
Highbush Cranberry (*Viburnum trilobum*)
Honeysuckles (*Lonicera* spp.)
Goat's Beard (*Aruncus dioicus*)
Rugosa Rose (*Rosa rugosa*)
Sargent Crabapple (*Malus sargentii*)
Serviceberries (*Amelanchier* spp.)
Snowberry (*Symphoricarpos albus*)
Sumac (*Rhus* spp.)
Winterberry (*Ilex verticillata*)

Maintenance: Upfront costs may be steep; long term investment. Weeding will need to be done regularly as before plants fill in. Pruning, and shearing will need to occur once or twice a year.



Aruncus dioicus - hardyplants.com



Sambucus canadensis - lincolnoakes.com



Ilex verticillata - yourgardenshow.com



Viburnum trilobum - marysplantfarm.com



BEAUTY & HABITAT: *Predatory Bird Habitat*

Description: A common way to invite predatory birds into the area is to allow dead or dying trees to remain. Unfortunately, these snags - as they are known - are not necessarily safe or desirable in urban areas and alternative habitat for nesting must be provided. Nest boxes attract cavity nesting birds and are an excellent educational tool for urbanites to learn more about these helpful hunters.

Target Species: American Kestrel, Common Night Hawk, Peregrine Falcon, Chimney Swift, Osprey, Bluebirds, Purple Martins, and, possibly, Common Barn Owl

Maintenance: Nest boxes must be maintained regularly to ensure they are not invaded by unwanted species.

More Information: <http://mn.audubon.org/>



American Kestrel Box - nativeamerica.com

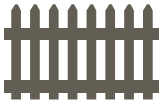


Barn Owl Box - nativeamerica.com



Peregrine Falcon Box -blog.greatriverenergy.com





CONTROLLING ACCESS

Urban farmers and gardeners have to delicately toe the line between creating an inviting space and managing unwanted foot-traffic. Traditional scare tactics used by rural farmers probably won't do much to keep curious folks from traipsing across your cucumber vines. But, privacy fences or tall hedges limit educational opportunities and create a safety concerns. The trick with controlling access to plots is to direct views, paths, and interactions with a space that will let people know what is happening in the space, allow a small peek or walk, and firmly direct them down a certain path.

Directing views and foot-traffic can be done through vegetation, structure, or both. This section offers suggestions for specific arrangements, types, and growing techniques of vegetation that can be used to create a physical or visual barrier. These barrier designs can also be used in conjunction with a beneficial border. Structural ideas will be discussed in the Growing Structures section.

CONTROLLING ACCESS: *Framing Views*

Description: Known as “*shakkei*” or borrowed scenery in Japanese gardening, it is the use of plants and vegetation to direct the eye to a certain view. Usually used in reference to borrowing a distant backdrop as part of your own composition. This outward direction of view may be the case for some urban farms who want to showcase the view of a downtown skyline, but it can also be applied to how the passerby experiences the interior view of the garden.

By thinking strategically about the foreground, middle ground, framing devices (taller trees and shrubs) and the background (the view being emphasized) farmers and gardeners can highlight a specific views into their plot. Garden Designer P. Allen Smith suggests using a camera to help frame views you want to see and then opening a sight line to the desired object and screening out surrounding distractions.

Suggested Species: Can be used with any of the hedge, border, living fence, or willow fence species listed.

Maintenance: Weeding and pruning as needed. Special emphasis will have to be placed on pruning and shaping the plants to maintain the desired view.

More Information: <http://learn.bowdoin.edu/japanesegardens/elements/borrowed/borrowed.html>



jameskerr.co.uk



ellishollow.remarc.com



sbs.umkc.edu



CONTROLLING ACCESS: *Living Fences*



Euonymous & Juniper - cgpblog.org



Miss Kim Lilac - juniperhillfarmnh.com



Red Twig Dogwood - houzz.com

Description: A permanent row of trees or shrubs planted tightly enough to serve as a barrier much like a built fence but also offer ecosystem services including habitat for insects, spiders, toads, snakes, birds, and small mammals. Historically, tough thorny species were planted very closely together and then pruned tightly to encourage thick, busy growth.

Suggested Species: Any of the following planted about twice as close together usually recommended.

American Holly (*Ilex opaca*)

Arrowwood Viburnum (*Viburnum dentatum*)

Cotoneaster (*Cotoneaster adpressus* var. *praecox*)

Dogwoods (*Cornus* spp.)

Eastern Red Cedar (*Juniperus virginiana*)

Elderberry (*Sambucus canadensis*)

Burning Bush (*Euonymous alatus*)

Hawthornes (*Crataegus* spp.)

Highbush Cranberry (*Viburnum trilobum*)

Miss Kim Lilac (*Syringa patula*)

Rugosa Rose (*Rosa rugosa*)

Sargent Crabapple (*Malus sargentii*)

Sumac (*Rhus* spp.)

Winterberry (*Ilex verticillata*)

Maintenance: Long-term investment. Can be started with small saplings to keep cost down but will require ongoing weeding and pruning.



CONTROLLING ACCESS: *Willow Fences*

Description: Winter pruning of willow branches are transformed into a beautiful, functional living fence. The flexible willow saplings are woven and braided into a custom fence. Willows readily re-root once planted into the soil and grow quickly if watered regularly.

Suggested Species:

Salix alba 'Vitellina', 'Britzensis', 'Sericea'

S. 'Americana'

S. fragilis 'Belgium Red'

S. rigida 'American McKay'

S. hagensis

S. interior

S. koriyanagi 'Rubikins'

S. petiolaris

S. purpurea #187

S. purpurea 'Eugenii'

S. purpurea 'Irette'

S. purpurea 'Green Dicks'

S. purpurea ssp lambertiana

S. purpurea 'Streamco'

S. rigida 'American McKay'

S. rubens 'Hutchinsons Yellow'

S. triandra 'Black Maul'

S. triandra 'Noir de Villane'

S. viminalis

S. viminalis 'Superba'

Maintenance: Labor intensive but quick growing. Installation of the fence will take planning, patience, and creativity. Saplings should be planted 8-12" apart and woven into any desired pattern. Depending on the width of the saplings, sturdier fence post may be needed every 8' or so to help stabilize the young fence. Pruning or shearing will need occur periodically if the saplings are to be seen and a more manicured appearance is desired. Willows like a lot of water - to help quench their thirst plant in a damp, low-lying area.

More Information: http://willowweaver.com/living_willow_structures.htm



suffolkgardendesign.co.uk



willowweaver.com



westwaleswillows.co.uk



CONTROLLING ACCESS: *Fruiting Hedges*



Blueberry -
thegardendiaries.wordpress.
com



Serviceberry - prairiemoon.com



Currant - hort.purdue.edu



Aronia -
missouribotanicalgarden.org

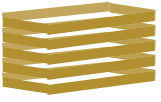
Description: Comprised of one or more varieties of fruiting shrub species, this offers an opportunity to introduce larger perennial plantings into a border for added curb appeal, traffic control, and food production. The shrubs may be combined with other perennials to create a seasonal border and attract beneficial insects or may be a singular species to create a simpler look and a more consistent crop.

Suggested Species: Aronia, Serviceberry, Blueberry, Currants, Chokecherry, Gooseberry, Elderberry, Plum

Planting Guide: Most fruiting shrubs require full to part-sun. The sunnier the location, the better the fruit production. Blueberries require acidic soil and should only be combined with other acid-loving plants if used in a mixed border (Azaleas, Rhododendrons, Pinus sp).

Maintenance: Weeding and pruning as needed - preferably in the fall to avoid cutting of spring buds.





SOIL FERTILITY

Good quality soil is invaluable. Most urban lots don't have much to offer when it comes to soil quality so investments must be made to grow healthy plants. An initial purchase of high-quality soil may be necessary, but continually adding fertility to that soil can be part of a farm or garden design.

Unfortunately the easiest solution - large-scale composting - isn't possible on most urban plots: there simply isn't room and the large piles can be odorous and unsightly. In spite of the limitations, there are a couple of design moves that can be made in the urban plot to help with ongoing soil fertility. The use of compost bins and compost trenches will allow for a small amount of compost to be made on site. Cover crops also improve soil quality and can add to the visual appearance of site during the off season.

SOIL FERTILITY: *Trench Composting*

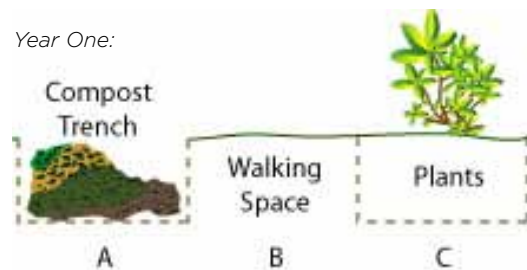
Description: A method of composting where 'green' materials are put it into a trench or pit. A trench is dug of equal width and depth and then start with browns on the bottom, alternate layers of brown, green materials, and one inch of soil. Moisten pile as you build and lastly cover remaining with soil. Let sit for 1-2 months before planting.

Suggested Species: Great for growing runner beans, peas, zucchini, squash, and pumpkins. The compost trench can run parallel to a row of plants - see diagram for a 3 year rotation.

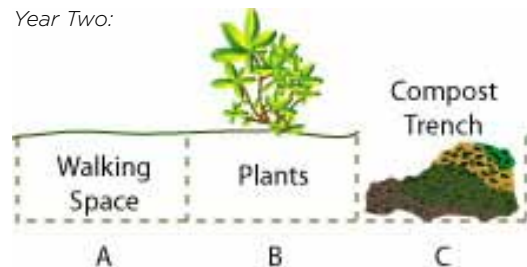


gardenorganic.org.uk

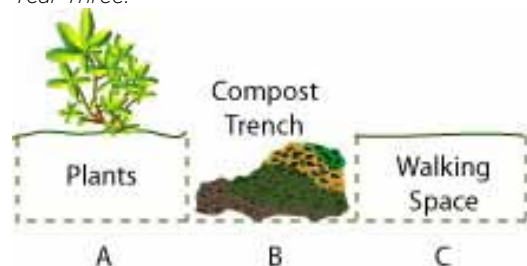
Year One:



Year Two:



Year Three:



web.extension.illinois.edu



SOIL FERTILITY: *Multi-Bin Composting*



Description: Sturdy but inexpensive bins made of recycled wood pallets or other scrap wood. Standard composting techniques apply. Multi-bin compost systems allow for continuous processing of large amounts of materials. In a typical 3 compartment system, materials can be turned and mixed from one compartment to the next, leaving a third compartment system for curing and/or storage.

Maintenance: Wood may need to be replaced over time. A cover may be made if the squirrels become a nuisance, but it is best to fashion a wooden frame and hardware cloth/chicken wire cover to allow for rain to get in. A compost pile should as wet as a wrung out sponge on a regular basis.

More Information: Wooden pallets are often available for free on Craigslist. Seafood markets, distribution warehouses, and hardware/garden centers also give them away for free - check with your local stores.



SOIL FERTILITY: *Cover Crops*



Buckwheat - ces.ncsu.edu



Interplanting of Winter Rye & Crimson Clover & - thebluegrassspecial.com



Winter Rye - gardenimperative.net

Description: Although not an obvious choice for a 'spatial design move' in the urban farm or garden, cover crops play an important role in both soil quality and plot management. From a soil perspective, cover crops - also called green manures - are planted on a bed in either the fall or the late winter and typically tilled into the soil before planting crops. The cover crops add nitrogen and organic matter to the soil, loosen compacted soil, and reduce erosion. They also attract beneficial insects and suppress weeds.

From a design perspective, cover crops send the message that a plot is occupied. Several beds planted solidly with one type of cover crop is a visual statement of intention and serves as a cue of care during the off season. Keeping beds full of cover crops also prevents weeds from taking over unused beds or even between crops during the growing season. The added ecological and social benefits are joined by an easier time of weeding - a win all around.

Suggested Species: Clovers, Annual Ryegrass, Winter Wheat, Peas, Beans and Soybeans. May be grown individually or as a mixture.

Maintenance: Seed, water, till. No-till methods are also possible.

More Information: http://www.rodaleinstitute.org/no-till_revolution; <http://www.extension.umn.edu/distribution/horticulture/M1228.html>





WATER

Access to water may be one of the greatest physical limitations to filling all of the vacant and abandoned lots in a city with lush, vibrant vegetables. Figuring out how to get water to your plot may involve multiple lengths of hose, carrying multiple buckets, and some serious sweet-talking of your neighbors.

Depending on your relationship with the city water department and your proximity to a fire hydrant, you may be able to tap into the city water system for a small fee. If a hydrant is nowhere near but your neighbor has a spigot a few feet from the property line, working out a deal with them is probably your best bet for a consistent water supply. As with any favor you ask of your neighbor, clear communication about expectations is necessary to make certain there are no misunderstandings mid season that leave you with 20 watermelon vines and nothing to water them with.

If you are not so lucky to find a water connection, the following design ideas will help you gather your own water on site. Any way the water is gathered, efficient irrigation is also necessary.

WATER: *Rain Water Harvesting (RWH)*



Butterfly Roof - tworque.blogspot.com



Slanted Roof - communitygardening.blogspot.com



Fabric Catchment - tworque.blogspot.com

Description: Gathering rainfall off of nearby roof tops, on-site structures, or temporary catchments into a storage container for later use in irrigating crops only. Systems can range from incredibly simple to very complex. The most successful technique is to consider how every elevated hard surface on your plot or very nearby can drain into a tank of some sort.

If a house or building is nearby and has a traditional gutter and down spout system, ask the neighbors if you can hook up an accordion tube to the spout and start gathering their roof water. If a new structure is built attempt to have a butterfly roof if at all possible. A butterfly roof directs all of the water that hits the roof to one central valley and then pitches to one end or the other making the greatest impact possible. A slanted and angled roof on a small storage shed can accomplish the same task to a smaller degree. Even a strong piece of fabric with a central hole and funnel suspended between two poles or trees will manage to catch a small amount of water.

Maintenance: Make sure any system is set up to overflow away from a building. Any temporary catchment systems should be taken down after use in order to prevent damage to more delicate materials and to help keep your plot looking tidy and well kept. All systems should be winterized.

More Information:

Downspout filters and a variety of other specialized parts for systems can be purchased from:

<http://www.starkenvironmental.com/a-1-filtration.html>

<http://www.braewater.com/>

<http://www.rainharvesting.com.au/default.asp>

<http://downspoutfilter.com/index.php>

<http://rainharvest.com/shop/default.asp>

Tools and PVC gutter pieces can be purchased at your local hardware stores. Lowes or Home Depot also sells these items. For locations near you, visit their websites at

<http://www.lowes.com/>

<http://www.homedepot.com>

<http://www.menards.com/>



WATER: *Rainwater Storage*

Description: The water that is captured must be stored until it is needed. Traditional 55 gallon rain barrels will not make much of a dent in your watering needs but a chain of 4 or 5 of them will begin to help. If at all possible, a larger container is ideal. Intermediate Bulk Containers (IBCs) are used to transport fluid and come in 250-330 gallon sizes. To stand up to the elements, plastics should be kept out of direct sunlight. The clear plastic of IBC should be covered to prevent algae from growing - use a quick growing annual vine such as Scarlet Runner Bean to cover the plastic for the summer. The next step up is an Above Ground Cistern if budget and space allow. There are many varieties and styles available.



Rain Barrel Chain - endofordinary.blogspot.com

Maintenance: Make sure any system is set up to overflow away from a building. Winter maintenance will be the largest amount of labor. Depending on the size and type of material, the container may need to be drained before the weather freezes. The catchment system should be shut off and redirected during winter to prevent any immediate flooding issues..

More Information: Polyethylene tanks are best purchased locally because of high shipping costs. Search online for local suppliers.
- Craigslist will often have some.

Websites that sell tanks:

<http://www.liquidlogictanks.com/index.html>

<http://www.tank-depot.com/>

<http://www.rainbarrelsource.com/>

<http://www.rainbarrelsandmore.com/>

<http://www.aquabarrel.com/>



Intermediate Bulk Container - onestrawrob.com



Vertical Rain Barrel Chain - Conchacastaneda.blogspot.com



Above Ground Cistern - communitygardening.blogspot.com



WATER: *Bucket Drip Irrigation*

Description: The final step in successful Rain Water Harvesting is to get the water to your plants. Drip irrigation reduces the amount of water used during watering because the water is applied directly to the soil and therefore none is lost to evaporation. Bucket Drip Irrigation is a simple gravity irrigation system perfect for small gardens and farms using 5 gallon buckets (or larger) raised at least 3.3' off the ground to create adequate pressure. The water exits the bucket through a simple nozzle connected to tubes/pipes/hoses running to drip hoses along your crop rows.

Maintenance: Raising the buckets almost 3.5' off the ground may be the biggest design challenge. Semi-permanent platforms or poles need to be securely stabilized to prevent tipping or spills. Connecting the hoses may be finicking and time consuming at certain times but worth the savings in water bills. Care should be taken in a standardized set-up to allow for ease of use and visual appearance.

More Information:

<http://www.driptech.com/>

Drip irrigation suppliers include:

<http://www.dripdepot.com/>

<http://www.dripirrigation.com/>

<http://www.rainbird.com/drip/index.htm>

<http://www.dripworksusa.com/>

<http://www.netafim.com/>

<http://www.chapindrip.com/>

<http://www.farmtek.com>



gangemithinkingdesign.blogspot.com



hydrosources.com



doubleharvest.org





Animal husbandry has been going on in cities since ancient history. Tending to an urban flock is very en vogue at the moment and for farmers and gardeners it is for good reason. The poor soil quality and limited room for large-scale composting means natural fertilizers and amendments need to be added often. Rabbits, chickens, and goats offer the perfect solution: lots of high-nitrogen fertilizer. They also can provide your market stand with a wider array of goods.

Keeping livestock on your plot is not for the novice farmer; the following pages do not give instructions on raising such animals but rather unique shelters, cages, and coops in which they may reside. The structures must be carefully chosen to allow for maximum spatial efficiency as well as protection from the elements. The precedents given will hopefully inspire you to think beyond the basic and develop a shelter suites your needs.

As a reminder, cities vary on their animal ordinances. Please check with your city government to see what is or is not allowed regarding livestock in the city.

ANIMALS: *Goat Shelters*

Description: A basic box with adjustable door settings will provide the protection from the elements goats need. These shelters can also be modified slightly to also double as climbing structures for the goats. Regardless of shelter type or size, goats need plenty of room to play. Make sure you give them at least 1,000sq feet. Keep in mind goats will eat everything so best not to let them near the living willow fence or fruiting hedgerow you just painstakingly installed.

Maintenance: Please see a book on goat care for more information.

More Information: The Essential Urban Farmer by Novella Carpenter and Willow Rosenthal has an excellent chapter on goats. Take care to make adjustments for our northern climate.



slowlivingessentials.blogspot.com



charlottesmenagerie.blogspot.com



blog.siffordsojournal.com



blog.siffordsojournal.com



ANIMALS: *Goat Platforms*



swchenkinphd.blogspot.com



agritech.tnau.ac.in



imagesbythehamiltons.com

Description: Goats love to climb! Small urban spaces make a second level for play even more appealing. Levels and complexity can vary - all they really want is somewhere to run and climb so it doesn't need to be fancy just very sturdily built.

Maintenance: Please see a book on goat care for more information.

More Information: The Essential Urban Farmer by Novella Carpenter and Willow Rosenthal has an excellent chapter on goats. Take care to make adjustments for our northern climate.



ANIMALS: *Rabbit Hutches*

Description: A rabbit hutch can be made of all metal, wood and chicken wire/hardware cloth, or fancier materials. The main design feature should be a wire bottom that allows the poop to fall easily to the ground or bin below. Rabbits are copious poopers so be ready to use lots of rabbit poop somehow. You can speed up the composting process by having red wiggler worms in bins or a in-ground trench below the cages.

Maintenance: Please see a book on rabbits for more information. Keeping rabbits should be a separate adventure than placing nesting boxes for predatory birds unless you really want to see how Mother Nature works.

More Information: The Essential Urban Farmer by Novella Carpenter and Willow Rosenthal has a great chapter on rabbits. Rabbits do far better in cold weather than in overly hot weather.



survivalfarm.wordpress.com



communitygarden.org.au



urbanself-sufficientist.blogspot.com



communitygarden.org.au



ANIMALS: *Chicken Coops*

Description: A coop should have elevated perches, nesting boxes, access to the outside doors, and should have 4 sq ft/bird available.

Maintenance: Chickens are a lot of work. Please do plenty of research before taking the plunge.

More Information: Many people love to keep chickens and there are a multitude of sources, groups, and collectives out there willing to teach you about the joys of chicken keeping. A few websites to get you started:

<http://urbanchickens.org/>

<http://www.backyardchickens.com/>

<http://www.hipchickdigs.com/>



studio-h.org



telhaji.com



chickenbee.net





GROWING STRUCTURES

Space is limited for the urban grower. Creative steps must be taken to increase the amount of growing space available on your plot and making the most of the space you have. Structures such as raised beds, trellises, arbors, and planters can both increase the density of plantings as well give spatial definition within your plot.

The importance of raised beds for preventing exposure to potentially harmful soil contaminants and access to high-quality soil has already been discussed. Other advantages of raised beds include season extension, efficient use of space, and ease of maintenance. One of the greatest production limits the Northern farmer or gardener faces is the short growing season, but soil in raised beds will warm up more quickly in the spring time and retain warmth as the season wanes.

Beds that are 3-4' wide allow for all area of the bed to be easily reached via adjacent paths. Width of the path will depend on accessibility needs, but a garden bed and path could take up as little as 5' of horizontal space. The narrow width of the bed combined with the high soil quality will allow for denser plantings - making there less weeding to be done and an easier time of doing it.

The easiest way to add more growing space to your plot is to grow up. Arbors and trellises offered the added benefit of created green 'walls' within your garden. These 'walls' or 'screens' can direct traffic as well as create shade for you and delicate veggies. These structures can be easily customized to fit your specific needs and space.

Other structures listed offer unique ideas for combining spatial definition with plant production. These final techniques may not focus directly on high-yields but may serve another important role in the urban farm or garden - a conversation starter.

GROWING STRUCTURES: *Cattle Panel Trellis*

Description: Sturdy wire cattle panels (typically measuring 16' long by 52" wide with 4" or 6" openings). The panels can be bent to create an arbor shape or left flat and set at an angle.

If creating a vertical structure, the angle of the curve can be adjusted to accommodate the growth particular species or the space available. The ends can be secured to the ground with fence posts, landscape stakes, cinder blocks, or fastened to an existing structure. Bird netting can be placed over the panel to support heavier items. Arbor-shaped trellises can also create an inviting entrance into the garden.

If the panels are left flat and simply angle over the ground to create a low trellis, they can be used in companion planting settings to protect under planted species from the harsh sun.

Suggested Species: Cucumbers, squash, melons, or any heavy species in need of a sturdy trellis system.

Maintenance: Up front costs may be prohibitive, the panels and stakes can be used for many years.

More Information: Cattle panels are available at farm supply stores such as Tractor Supply Company, Farm and Fleet, and Bomgaar's for approximately 20\$.



centralfloridagarden.blogspot.com



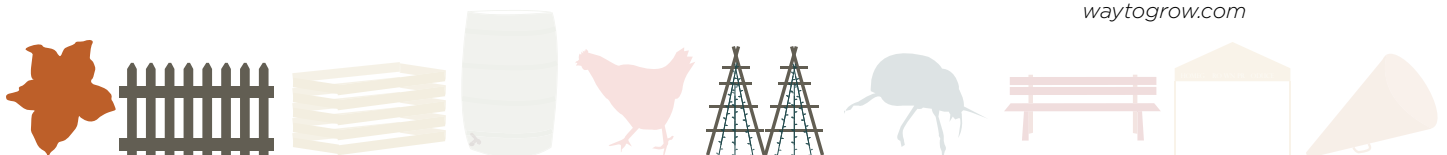
wellfedgardener.com



mckinneyfarms.com



waytogrow.com



GROWING STRUCTURES: *Framed Wire Fencing*



newhomeeconomics.wordpress.com



agrowingtradition.com



newworldgeek.com

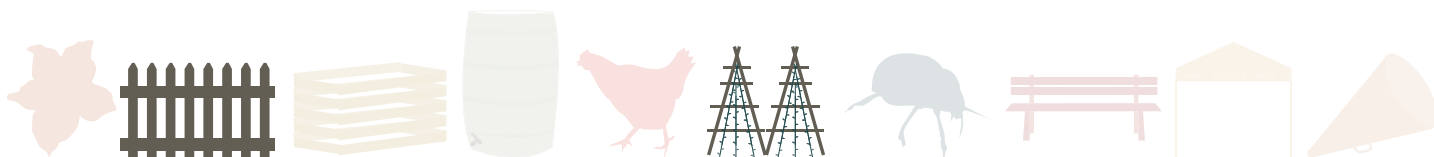
Description: Welded wire 14-gauge fencing cut to size and stapled to 2"x2" cedar posts. Fencing comes in rolls 4 feet by 50 feet. Length can vary according to needs and space available.

Frames can be designed vertically or horizontally and can be free standing or fastened to existing fences or structures. If used along the perimeter of a property, a horizontally-oriented trellis becomes a living fence.

Suggested Species: Cucumbers, squash, melons, or any heavy species in need of a semi-sturdy trellis system.

Maintenance: Finished trellises can be stored flat and used for years to come. Trellis can also be disassembled and the wire rolled up to be used again.

More Information: Welded wire fencing is available at hardware and home improvement stores for 40-60\$ for a 50' roll. 2"x4" mesh is ideal for vegetable trellising.



GROWING STRUCTURES: *A-Frame Trellis*

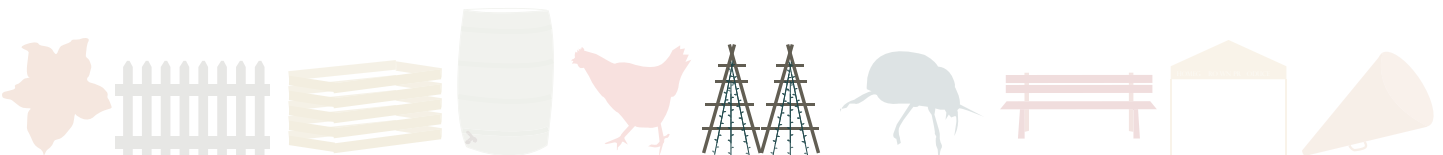


Description: Two posts are set at an angle to create an 'A' at each end and a horizontal piece is set on top. Post materials can be cedar, rebar, bamboo, or large garden stakes. The vertical supports for growing can be twine, garden stakes, or bamboo depending on the types of plants being grown. Wire or mesh fencing could also be used in place of individual vertical posts.

Suggested Species: Lighter-weight vegetables such as cucumbers, peas, and pole beans.

Maintenance: Bamboo or garden stakes need little maintenance during the growing season and will last a few years. Twine may need to be tightened periodically during the growing season and can be re-used or composted at the end of the season.

More Information: Cedar stakes for the frame and bamboo or garden stakes for the vertical growing pieces are available at hardware stores, lumber yards, or home improvement stores. Rebar can be found at re-use centers. Heavy-duty jute twine is available in gardening sections of hardware stores.



GROWING STRUCTURES: *Florida Weave Technique*

Description: Used specifically for growing tomatoes, the Florida weave technique consists of metal, cedar, or bamboo stakes placed at 8-10 intervals within a row of tomato plants. Starting when seedlings are approximately 12" high, jute twine is strung horizontally between each post on either side of the row to gently contain the plants within that row. As the plants grow, another section of jute is strung. This continues for every 1-2 feet of growth.

Suggested Species: Tomatoes - determinate varieties will be easier to contain than indeterminate.

Maintenance: String the jute twine as the tomatoes grow may be time consuming and it is necessary to make sure the twine is tightly secured to the stakes to prevent sagging. In spite of the time investment, the Florida Weave allows for inexpensive trellising of many tomato plants.

More Information: Stakes and twine are available at hardware and home improvement stores.



thetomatogarden.proboards.com



thetomatogarden.proboards.com



thyhandhathprovided.com



GROWING STRUCTURES: *Teepee Trellis*

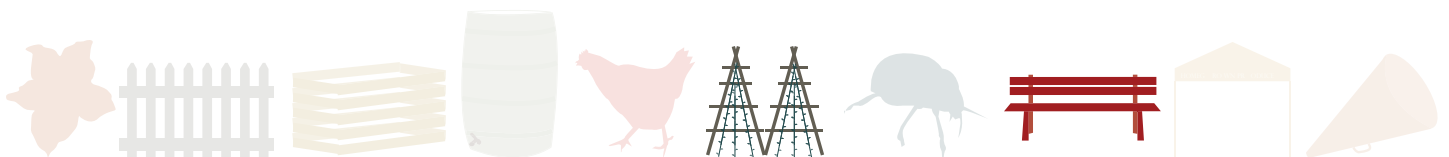


Description: Three - five poles arranged into a circle or semi-circle. Twine, rope, wire, or saplings are strung horizontally from the base upwards. Poles can be made out of garden stakes, bamboo, PVC piping, rebar, or natural materials. Size is variable. Small teepees are good for children's gardens or educational purposes. Larger ones can double as an playspace.

Suggested Species: Lighter-weight vegetables such as peas and pole beans.

Maintenance: Bamboo or garden stakes need little maintenance during the growing season and will last a few years. Twine may need to be tightened periodically during the growing season and can be re-used or composted at the end of the season.

More Information: Cedar stakes for the frame and bamboo or garden stakes for the vertical growing pieces are available at hardware stores, lumber yards, or home improvement stores. Rebar can be found at re-use centers. Heavy-duty jute twine is available in gardening sections of hardware stores.



GROWING STRUCTURES: *Recycled Bike Rim Trellis*

Description: Two old bicycle tire rims are suspended on a central stake. Lightweight twine or string runs vertically between two rims and creates a unique growing trellis for peas.

Suggested Species: Light weight vegetables such as peas and possibly pole beans. Also could be used for ornamental flowers.

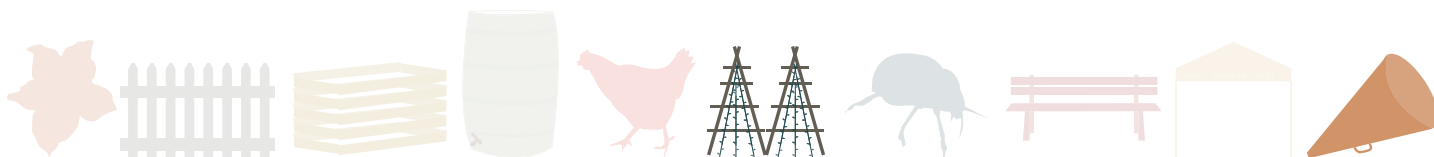
Maintenance: Once the trellis has been constructed, little maintenance is needed. Tire rims can be used for multiple seasons but twine or string may have to be replaced.

More Information: Ideal for a youth or community activity. Inspires talk about creative reuse and unconventional materials; a conversation piece.

Inquire with local bike shops for donation of empty tire rims.



suitedtotheseasons.com



GROWING STRUCTURES: *Chicken Wire Slanted Trellis*

Description: Chicken wire is secured to a wooden frame and propped on two stakes at a 45° angle. Area under trellis is great for growing salad greens that need to be shaded from direct sun.

Suggested Species: Ideal for cucumbers.

Maintenance: Bamboo or garden stakes need little maintenance during the growing season and will last a few years. Twine may need to be tightened periodically during the growing season and can be re-used or composted at the end of the season.

More Information: Cedar stakes for the frame and chicken wire are available at hardware stores, lumber yards, or home improvement stores. Chicken wire is available in 2', 3', or 4' widths and in rolls of 50' or 100'. Depending on size, price varies between 30-60\$.



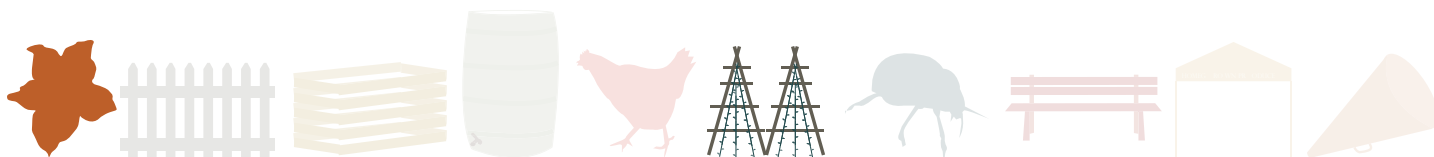
floridavegetablegarden.com



thriftyfun.com



adventuresinmyurbangarden.blogspot.com



GROWING STRUCTURES: *Raised Beds*



democraticunderground.com



seattleurbanfarmco.com



newfarm.rodaleinstitute.org

Description: Beds of soil 12"-24" higher than the ground around them. They may be contained around the edge or simply mounded. The shape of the mound can vary for different reasons - for instance, a hilled bed provides the largest growing surface but a lipped edge one will hold water a little longer.

Suggested Species: Any!

Maintenance: Soil may need to be reshaped or supporting boards may need to be replaced over time.



GROWING STRUCTURES: *Espaliers*



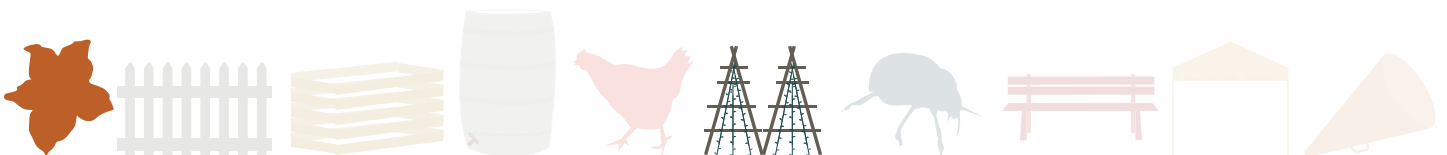
Description: A plant being trained to grow flat or the act of controlling the growth of a plant to be flat - usually against a fence, wall, or trellis. Can be an excellent way to combine fruit production, spatial definition, and visual excitement within your plot. Fruit trees grown against a South facing fence or wall may ripen earlier due to the reflected and radiant heat.

Suggested Species: Apples, pears, plums, cherries, or apricots. Best if it has been grafted onto a dwarf or semi-dwarf rootstock.

Maintenance: Long-term maintenance and labor intensive but if you are dedicated, the outcome will be well worth the worry. Requires patience and attention to detail.

More Information: Excellent resource though care must be paid to some statements as they are more applicable to the Southern gardener or farmer:

<http://www.ces.ncsu.edu/depts/hort/consumer/quickref/general/espalier.html>



GROWING STRUCTURES: *Cinder Blocks*

Description: Concrete cinder blocks placed with the holes up can be arranged in a multitude of styles. Placed along a path edge and planted they can become a cheerful way-finding tool within a plot. If they are stacked creatively, they can serve as a small retaining or freestanding wall with an added charm of crevice plantings in the holes. Or, they can be used to edge raised beds with vegetables in the middle and companion herbs to in the sides.

Suggested Species: Mediterranean herbs such as thyme and rosemary will do well in the warm, small planters. Any heat tolerant herb or flower will flourish.

Maintenance: Care should be taken when stacking more than a few bricks high. Will last years without much need for maintenance.

More Information: Cost runs around \$1-1.50 per brick making this a strong and sturdy option for a relatively inexpensive price.



Herb Garden - statesman.com



Planter Wall - indulgy.com



Path Edge - lisaemtp, via Flickr



GROWING STRUCTURES: *Tube Planters*



joy-pad.co.uk

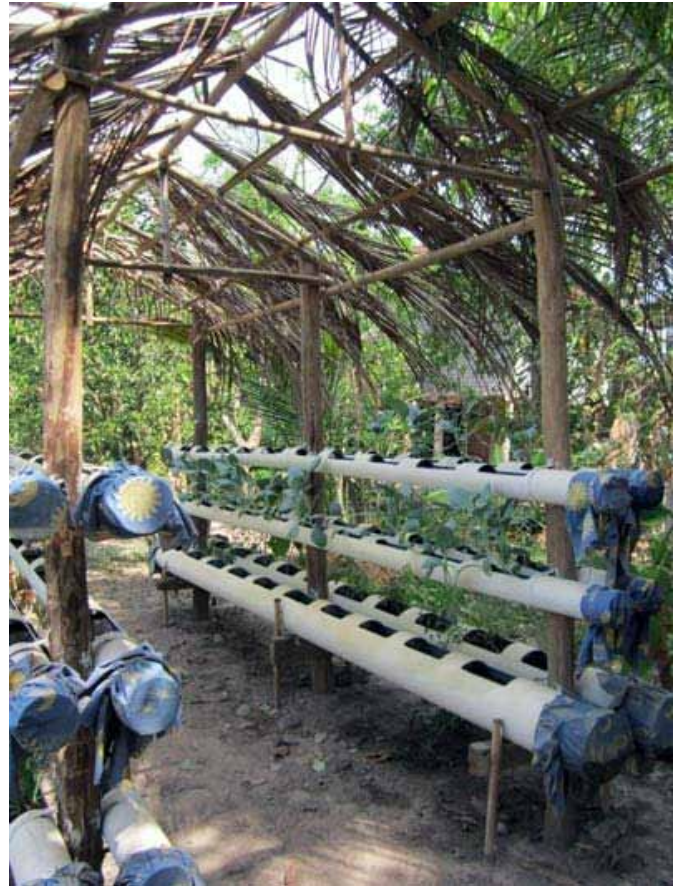
Description: PVC tubing can be used for more than just plumbing. Cut into 18' sections, pounded down into the ground and filled with soil, it can become an eye-catching row of planters. Cut into longer pieces and secured into the ground by fitting over a piece of rebar pounded into the ground, they can become unusual tall thin planters to demarcate space.

With sections cut out of them lengthwise and hung horizontally, they can become long sectional planters hooked up to an irrigation system. Horizontal planters can be used similarly to a fence to create a boundary. They can also be hung from an existing structure.

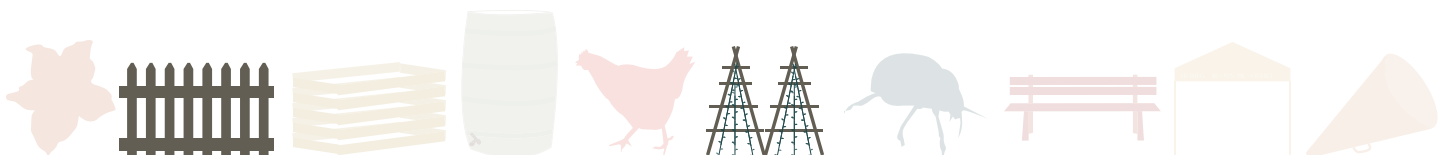
Suggested Species: Dependant on irrigation available - heat and drought tolerant species for in vertical planters. Greens, herbs, and water loving veggies in horizontal planters.

Maintenance: Will be a lot of up-front work and monetary investment but materials will last for several years and require very little upkeep.

More Information: PVC and other structural materials are available at hardware stores, lumber yards, or home improvement stores. PVC and rebar may be found on Craigslist or home reuse it centers.



blog.lib.umn.edu





GATHERING SPACE

For those looking to use their space to turn a profit at a market, a CSA, or other sales, making room for people in your plot may not be a top priority. But, urban green space you are creating has influence beyond your own pocket book; urban farms and gardens are an opportunity to educate community members about the food system, ecological biodiversity, and healthy lifestyles. Although some of this education occurs through casual conversation and an example of stewardship, making a physical space within your plot for formal education makes a powerful statement about value of your work within the whole of the greater community.

The type of educational work you are planning to pursue may determine the size and type of gathering space you design. Or, simply designating a small portion of your space for comfortable informal conversation will allow for you to slowly develop your role as an urban agriculture educator.

GATHERING SPACE: *Educational/Large Group*



theradioblog.marthastewart.com



commongoodcityfarm.org



fritzhaeg.com

Description: An area with simple seating, a little bit of shade, and a central gathering point goes a long way in creating a space for story-telling, classes, demonstrations, public speaking, and community meetings. If a more elaborate educational curriculum is planned around food and healthy eating, a counter area/dais/desk with access to running water and possibly electricity will be enough for food preparation, cooking or preserving classes, and hands-on experience.

If food preparation infrastructure isn't needed, simply an area of the plot - perhaps the shady corner where veggies won't do well - can be left open with a few seats or make shift benches to allow for group gatherings, volunteer days, and celebrations.

The use could change seasonally: spring demonstrations, give way to summer classes, fall harvest parties, and winter bonfires.

Maintenance: Weeding and mulching, general upkeep of seating elements when needed.



GATHERING SPACE: *Informal/Small Group*

Description: As with the larger space, a small area with simple seating and a little bit of shade will suffice. More or less can be added depending on the presence or lack of open green space, the users of the plot, and seasonal requirements.

Safety is of utmost concern. Ideally the area, should have a little bit of shade and hopefully a feeling of being surrounded by nature but not be so far removed to be hidden. Nothing should block a view to or from the entrance to the garden if at all possible.

Maintenance: Weeding and mulching, general upkeep of seating elements when needed.



Small Gathering Circle - slowfoodoc.org



*Temporary Straw Bale Benches -
allergylifeinloudoun.com*



Arbor with Small Bench - sunset.com





BUSINESS MANAGEMENT

The crossover between the spatial design of a plot and how a business is managed may not be large. Yet, there are a couple of areas where business infrastructure can be built into plot layout. Adequate tool storage, a foundation for market sales, and smooth internal communications are all critical to an urban agriculture business succeeding.

To maximize space, consolidate on site structures into multi-functional spaces as much as possible. Figuring out how to combine a tool shed and a class room, a water harvesting device and a market awning, or a chicken coop and a storage area allows you to imagine more uses of your limited space. Adding in ideas about how and where on-site market sales might occur is another aspect to structure planning, but can be a successful combination if carefully considered.

Keeping track of what is happening at each location and maintaining clear communication between employees, interns, and volunteers is a complicated matter - especially when many urban agriculture ventures are decentralized and dispersed across multiple sites within an city. Internal communication techniques and suggestions are offered to help organize multiple people across multiple places.

BUSINESS MANAGEMENT: *Multi-Site Record Keeping & Internal Communications*

Description: A clear list of to-dos, messages, and general information posted for employees or volunteers coming to the site promotes self-sufficiency and enables good use of people's valuable time. If at all possible, a chalkboard, marker board, and laminated map of the site can be tucked away from the eyes of the public to allow for as little disruption as possible. At a minimum, a notebook or binder with multiple pages of the site map, can be stored at each location in a heavy duty ziploc bag. Each week can have a designated page with an image of the site map and an area for notes to document where, what, and by whom tasks occurred during the week.

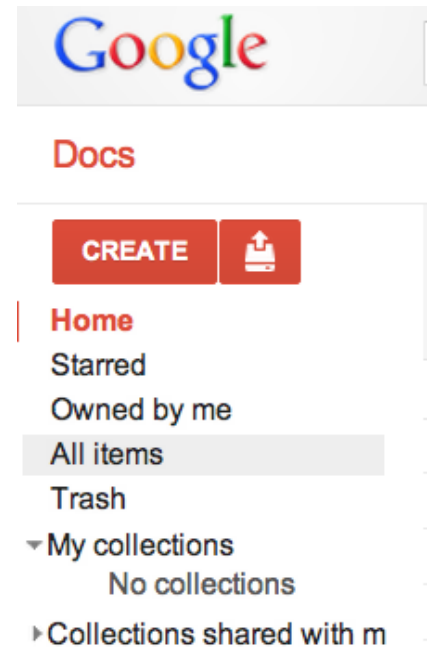


Daily Update Chalkboard - gourmetnyc.com

If a coverage from the elements such as a storage shed or bin isn't available and there are multiple people involved in the planning, layout, planting, and maintenance, electronic communication can be a collaborative venture between multiple authors. Services such as Google Documents and Dropbox allow for documents to be shared, uploaded, and downloaded by all parties. Google Documents will keep track of who has edited last and when - making certain everyone is working off the most recent version of a document.

Maintenance: Physical boards and hard copies will need to be upkept to ensure they are legible and writing utensils are available.

Electronic documents should be periodically organized to make sure items are being saved and uploaded to the proper location and consistent updates are being made.



BUSINESS MANAGEMENT: *Plant Labels*

Description: Plant Labels in a semi-public location cannot be fancy, must stand up to the elements, and are hopefully inconspicuous enough to be ignored by others but easy enough for employees and volunteers to see.

Labels made out of recycled materials cut down on costs and allow of ease of recreation if needed. Small, simple labels can be tucked near enough a plant to partially hide it but not obscure it completely.

Discarded venetian mini-blinds cut into ~6" pieces and written on with permanent marker are indestructible and straight-forward.

Clothes pins attached to a stick are an easy solution but may need to be reserved for semi-sheltered areas unless they have a secure enough attachment to stand up to the wind and blowing branches.

Repurposed wine corks stuck onto bamboo BBQ skewers may not provide a huge amount of room to write on, but they are otherwise useless items that hopefully are innocuous enough to hardly be noticed at all except for those who need to see them.

Maintenance: Reattaching and relettering as needed.

More Information: Friends and family can be asked to save wine corks during the winter. Clothes pins and venetian mini-blinds can be found at thrift stores or yard sales.



Mini-Blind Plant Labels - instructables.com



Clothes Pin - craftingagreenworld.com



Wine Cork Label - sslpurbanfarming.tumblr.com



BUSINESS MANAGEMENT: *On-Site Storage & Sales*



horticulturalbuildingsystems.blogspot.com



Shipping Container at Common Good City Farm - Anna Bierbrauer

Description: A storage building with a protected porch/overhang where a table can be set up for market days. Size is dependant on need, space available, and budget. Roof can be used for Rain Water Harvesting. One side of the building can also serve as a part of a chicken coop or structural side of a rabbit hutch.

Although they require a lot of space, shipping containers can also be easily retrofitted to allow for multiple uses and can securely close at night.

Maintenance: Simple building plans can be found online or small prefab sheds can be purchased. Cleaning, upkeep, security, and winterizing as needed. Growing vines up the side of the building can help deter grafitti artists and vandalism.

More Information:

<http://www.storageshed-plans.com/>

<http://www.popularmechanics.com/home/how-to-plans/sheds/1276536>





PUBLIC RELATIONS

Successfully telling your story is an important part of making sure your project thrives. Between smart phones, websites, and social media there are an unprecedented number of outlets to get your word out, electronic communication is only part of the public relations package. Physical forms of communication and opportunities for community feedback are vital to the message you send to the neighborhood in which your farm or garden resides.

Public relations is a full-time job and not one you may have time for on top of running your farm or garden. Luckily, electronic communications can be linked to increase the efficacy of your time and quickly create an online presence. Social media is a great way to share ongoing progress and a blog or website is a place to tell more about your story or give business details.

Reaching out to neighbors, passersby, and multi-generational users requires using hard-copy information about what you are doing. Ideas about branding, signage and on-site distribution of information is presented as well as ideas for eliciting interaction with your users and community.

PUBLIC RELATIONS: *Branding & Signage*

Description: A consistent visual presence helps the public consumer become familiar with your organization - especially important if you are at multiple locations. The development and use of a logo is important for professional communications and can visually connect you to other sister organizations or your own work in other locations.

Physical signs at all locations with your logo drawn, stenciled, or painted helps people identify your work within different areas of the community. The use of multiple mediums - paint, flyers, stencils, murals - scattered through the neighborhood garner interest and support. The visual representation of your work is a placemaking tool for neighborhood pride. Inviting neighborhood residents of all generations to participate in sign painting activities can further cement your place in the community consciousness.

Maintenance: Painting, touching-up, refreshing signs and information as needed.



McKINLEY
COMMUNITY

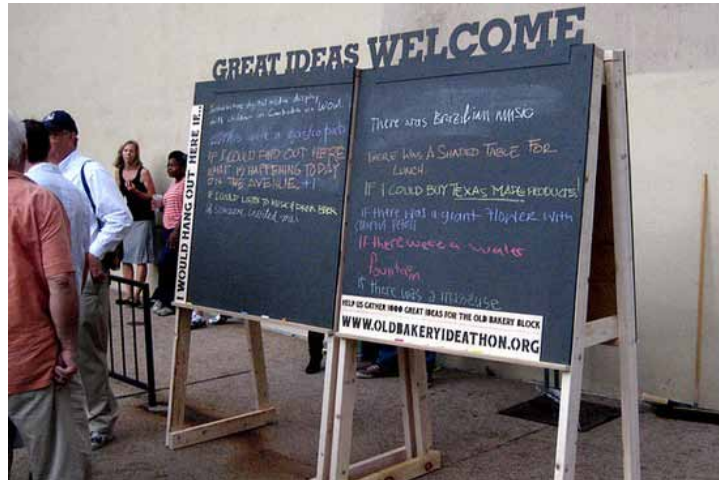


McKINLEY
COMMUNITY SUPPORTED AGRICULTURE

Jobs Beauty Health Community



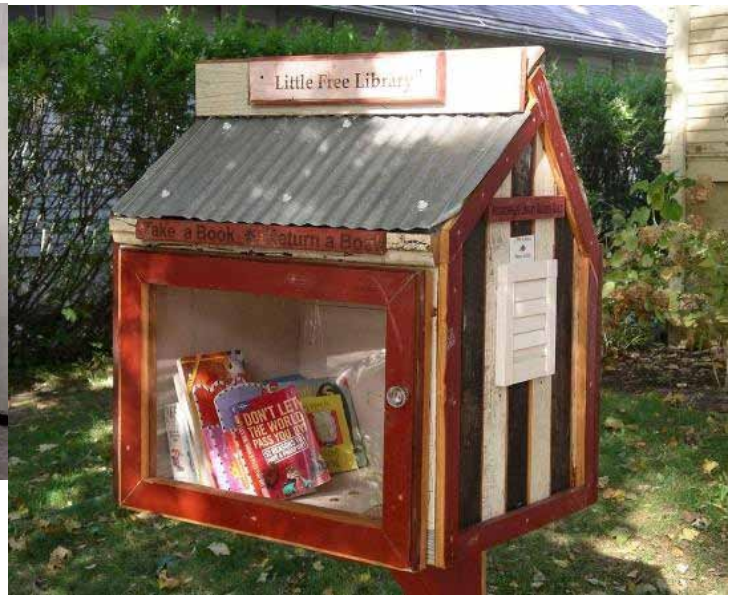
PUBLIC RELATIONS: *Neighborhood Feedback*



thoughtbarn.com



Candy Chang at avoision.com



Little Free Library - utne.com



Description: Soliciting neighborhood feedback is the most important step in educating people about what you are doing. Telling them your story is part of it, but asking them for input is a even more important. The more a community feels like you and your plot are reaching out to hear what they need from a green space, want in food, and have to offer in skills and labor the more they will advocate for your work.

Asking directly for input can be done in several ways. One way asks participants to simply fill in the blank. An urban farmer might use "I want to grow_____, I want to eat fresh_____, I want my neighborhood to have_____, " Or, simply asking questions and letting people write a response on a chalkboard can be a stress-free way of gathering input and hearing ideas.

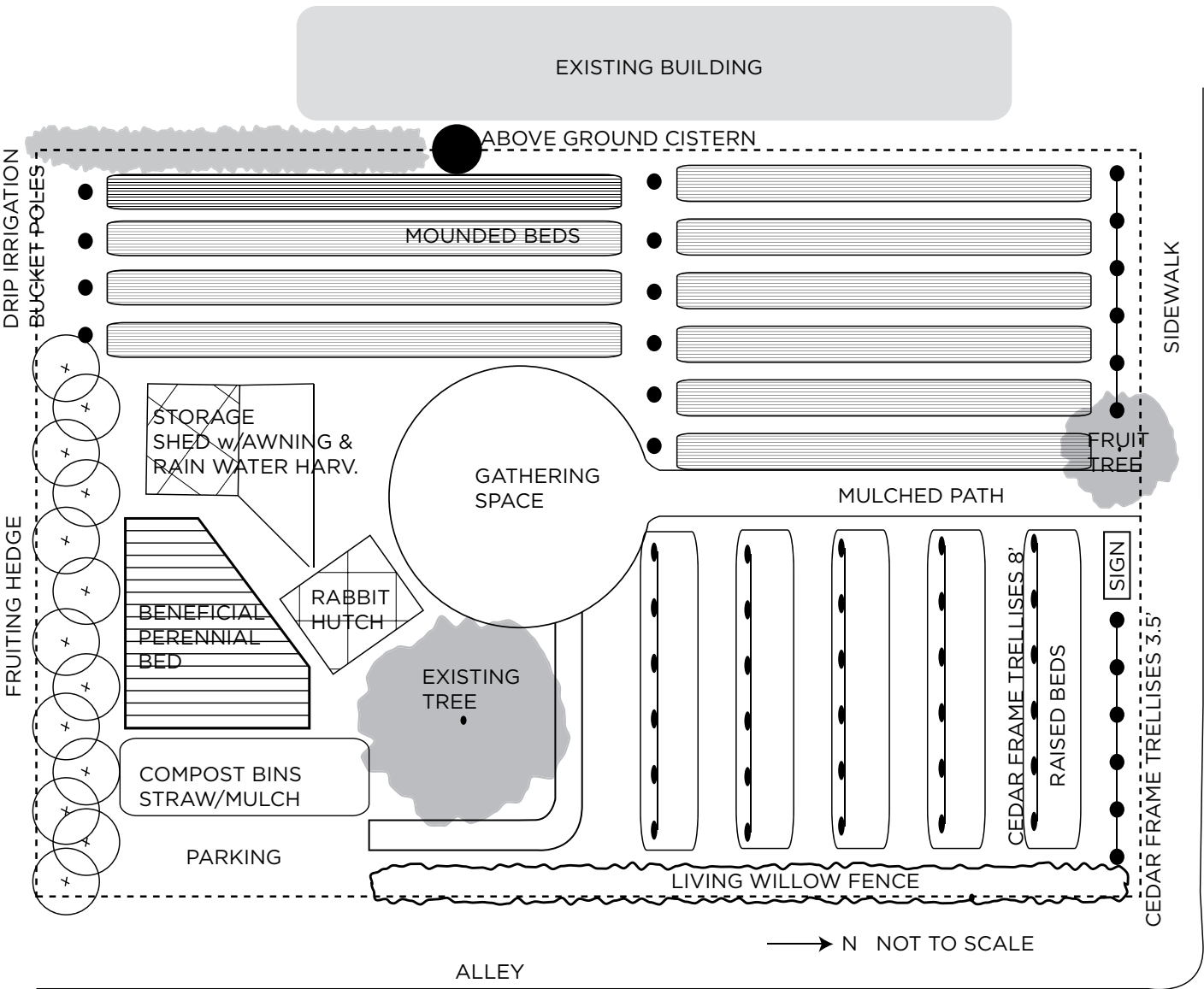
For a more continual give and take, a message box can be set-up on site that has small information brochures about urban agriculture and your program specifically. Notecards and pencils can be left in the box for responses back.

Technology can also be put to use. Pinger's textfree web allows you to sign up for a text message address that is sent directly to your email inbox. You then can respond via email but Pinger sends the message in text form to the sender. Posting a point of contact via text messaging that isn't a personal or business phone number protects your privacy while also opening an easy and powerful communication tool.

Maintenance: Any input that is gathered needs to be considered. Time needs to be taken to tally, consolidate, and clarify the messages that are gathered. A response of some kind needs to be made whether via immediate action, an information update via a chalkboard sign on site, or a flyer talking about what you learned.



EXAMPLE SITE PLAN



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- Bird Life International <http://www.birdlife.org/action/science/sites/>

WEBSITES

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Bird Life International <http://www.birdlife.org/action/science/sites/>

City of Minneapolis - <http://www.ci.minneapolis.mn.us/solid-waste/compost.asp> Drip Tech - <http://www.driptech.com/>

Gardeners - http://www.gardeners.com/gardening/content.asp?copy_id=5060

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P. Allen Smith - <http://www.pallensmith.com/>

Rodale Institute - http://www.rodaleinstitute.org/no-till_revolution; <http://www.extension.umn.edu/distribution/horticulture/M1228.html>